NORTH DAKOTA SUMMARY OF FY 2020
UIC CLASS II WORK EVENTS

The North Dakota Industrial Commission, Department of Mineral Resources, Oil and Gas Division (Division) continues to operate the Class II UIC Program without a significant non-compliance. The effectiveness of the program is the continued field presence and dedication of our 18 field inspectors and 7 field inspection technicians. Operators in North Dakota disposed of 610,979,343 barrels of saltwater and injected 109,151,715 barrels of saltwater and 714,485 MCF of gas for enhanced oil recovery, during fiscal year 2020.

The Division continued to conduct routine site inspections, witness nearly all mechanical integrity tests, witness nearly all plug and abandonments of all well types, permit disposal and injection wells, input data into our computer system, and conduct office administration. The strong field presence and witnessing of nearly all mechanical integrity tests and plug and abandonments helps ensure a timely response to fixing well failures and ensuring that all wells are properly plugged. The strong field presence also encourages compliance by the regulated community. There were no difficulties experienced in implementing our UIC workplan.

The Division continues to utilize its Risk Based Data Management System (RBDMS) computer database. It utilizes SQL 2008 as its backend and Access 2003 for the frontend. Part of our RBDMS database includes a laptop field inspection module. The Division continues to make numerous improvements to the database and frontend that allow us to more effectively and efficiently administer the UIC program, as well as the overall oil and gas regulatory program. This is possible because the Division has proficient programmers on staff. North Dakota's UIC program is strengthened by the utilization of RBDMS because it has brought consistency to the program, brought all of the various information collected into an electronic format in one database, and put information at the fingertips of the field inspectors as well as office personnel. This allows the Division to more easily and effectively monitor wells, track potential problems, and improve efficiencies for the Division as well as the regulated community. RBDMS also facilitates the Division in auditing various operator submittals to ensure the quality of the data submitted. The Division is in the process of implementing an RBDMS upgrade to become web-enabled. Release 1 consisted of Entity and Bond and went live in September 2019. Release 2 consisted of Entity Transfer, Well Management, Well Stimulation, Production Reporting, and UIC Volume Reporting and went live in January 2020. Release 3 consists of Field Inspection, Facilities, Dockets and Hearings, Compliance, and Incidents with a release date of June 2021.

The Division maintains its headquarters in Bismarck and has three district offices, one in Dickinson, one in Williston, and one in Minot. At fiscal year-end, the Dickinson District Office had six field inspectors, two field inspection technicians, two pipeline technicians, and one seismic inspector. One field inspector was let go and one pipeline technician was hired to replace another who was let go. At fiscal year-end, the Minot District Office had five field inspectors, four field inspection technicians, and one pipeline technician. One pipeline technician was promoted to field inspector and two field inspection technicians were hired. At fiscal year-end, the Williston District Office had seven field inspectors, two field inspection technicians, and two pipeline

technicians. One field inspector resigned and one field inspection technician was let go. For FY2021, the Division does not anticipate hiring additional field staff.

The Division began implementing an underground gathering pipeline program in FY2015. The program consists of a Pipeline Program Supervisor, Tamara Madche located in the Bismarck Office, and six pipeline technicians, two each in the Dickinson, Minot (one vacant), and Williston District offices. The Pipeline Program insects and monitors the installation of underground gathering pipelines, and their repair. New pipeline rules became effective January 1, 2017.

The field inspectors, field inspection technicians, and pipeline technicians communicate with the Bismarck office through cellular phones and through database replication. The field inspectors and field inspection technicians can access their email account and internet if they are in an area that has wireless internet capability, or through their cellular phone. The Division's field inspectors and field inspection technicians inspect all aspects of the oil and gas industry regulated by the Division and spend approximately twenty-five percent of their time on average on UIC matters.

Mark Bohrer has been in the UIC Manager position since July 1, 1999; Ashleigh Day has been in the UIC Supervisor position since October 1, 2015; and Jared Thune has been in the UIC Permit Technician position since July 9, 2018.

The Division issued 29 SWD permits, 6 EOR permits, and one area permit for EOR. The average time to issue a SWD permit was 170 days (115 days in house) and 114 days (99 days in house) for an EOR permit. The Division anticipates these permit times will decrease with the implementation of our database upgrade. These EOR permit times are inflated due to operators not submitting information in a timely manner. The Division does not charge a UIC permit fee. All UIC wells are covered by blanket or individual well bonds.

The Division did not have any orphan UIC wells at the end of FY2020.

The Division held 48 public UIC hearings, 21 for SWD, 22 for EOR, and 5 for pilot EOR projects. At the end of FY2020, we had 606 SWD wells, 78 SWD permits, 2 AGD wells, 718 EOR wells, and 50 EOR permits. The Division's goal is to inspect every well monthly. Violations are initially communicated to the operator verbally. If warranted, a letter will be written and placed in the well file. In extreme circumstances, a complaint may be issued.

The Division maintains all of our well logs available to the public as .TIF files via our website. We also have all open hole logs that can be submitted as .LAS files, since September 2000, available on our website.

The Division continues to accept electronic submissions of injection reports. The Division has implemented electronic reporting via webforms for production and UIC data and XML data submittals for production. The Division, through funding from the Ground Water Protection Council, completed installation of a batch XML production and UIC data submittal utility in August 2007. The Division completed an interface (forms, edit checks, and reports) to transfer the batch XML production data into RBDMS and the

utility was made available to operators in September 2008. The Division received the first batch XML data submittal for oil and gas production for the reporting month of November 2008. The Division completed an interface (forms, edit checks, and reports) to transfer the batch XML UIC data into RBDMS and the first batch XML data submittal for UIC was received March, 2010. The Division also completed an Adobe PDF project to allow operators to submit UIC data via interactive Adobe PDF forms and made it available to operators in March 2008. These Adobe PDF forms appear identical to the paper form operators have been utilizing but the data entered and submitted is then automatically transferred to our database after a final review. The Division received the first UIC data via interactive Adobe PDF forms for the reporting month of March 2009. The Division has been receiving oil and gas production via interactive Adobe PDF forms since the reporting month of January 2006.

The FY2020 USEPA Grant Agreement was not awarded until April 20, 2020. The Division continued to implement the UIC program without a reduction in the level of commitment.

Proposed carbon dioxide regulations were heard at a public hearing on September 4, 2007. These regulations were withdrawn on October 16, 2007, pursuant to a recommendation from the Attorney General's office. The 2009 legislature enacted legislation granting the Industrial Commission authority to regulate carbon dioxide sequestration. Proposed rules were published in September 2009 for a public hearing on October 15, 2009. The effective date was April 1, 2010. The EPA issued federal rules for Class VI wells for carbon dioxide sequestration on December 10, 2010. The Department of Mineral Resources hired a Carbon Capture and Storage Supervisor in July 2011 to administer North Dakota's Class VI program. Pursuant to the promulgation of the EPA Class VI rules, we decided to amend our rules to meet federal stringency requirements and a public hearing was held on April 24, 2012. These rules did not become effective and on a recommendation from the Attorney General's office, we again amended the rules and another public hearing was held on October 22, 2012. The rules became effective April 1, 2013 and the Division submitted a primacy application to EPA Headquarters and EPA Region VIII on June 21, 2013. The EPA Administrator signed the primacy agreement on May 8, 2017 and the approval was subject to a 60-day comment period which closed on July 18, 2017. The EPA granted primacy to North Dakota for the Class VI program effective April 24, 2018. Stephen Fried is the Carbon Capture and Storage Supervisor.

Division staff has frequently held meetings with prospective operators of both private and commercial projects to provide guidance on compiling a carbon dioxide storage facility permit. A storage facility permit includes delineation and characterization of the storage reservoir, and must be obtained before Class VI well permits will be issued to inject carbon dioxide. Characterization of three target saline reservoirs has involved seismic and stratigraphic test wells for the two ethanol plants and one coal-fired power plant. Target reservoirs are the Inyan Kara Formation, Broom Creek Formation, and Deadwood Formation. Seismic has been the chosen method of delineation due to sparse well data and the challenges with those particular reservoirs. The Inyan Kara Formation consists of channel sands, the Broom Creek Formation consists of eolian sand dunes with tight carbonate infill, and the Deadwood Formation is not a frequent drilling target. The ethanol plants near Richardton and Underwood would

capture and sequester nearly 200,000 tons of carbon dioxide annually each, and the coal-fired power plant approximately 3,000,000 tons annually. At the end of FY2020 five wells had been drilled as stratigraphic tests but constructed to Class VI standards. The Division anticipates an application for a storage facility permit and associated Class VI wells in the second quarter of 2021.

The United States Congress, through passage of the CARES Act, provided payments to state governments navigating the impact of the COVID-19 outbreak. The North Dakota Emergency Commission on May 12, 2020 approved a request for $33,175,000 in CARES Act funding for plugging abandoned wells in North Dakota. This appropriation was subsequently approved by the Budget Section of the Legislature on May 15, 2020. The North Dakota Emergency Commission on June 18, 2020 approved an additional request for $33,175,000 in CARES Act funding for reclaiming abandoned well sites, access roads, and associated facilities, abandoning and reclaiming produced water underground gathering systems, and abandoning and reclaiming treating plants, access roads, and associated facilities in North Dakota. This appropriation was subsequently approved by the Budget Section of the Legislature on June 25, 2020. The CARES Act requires the funds to be spent by December 30, 2020.

The Division awarded bids to plug 129 wells and plugged 90 of them in FY2020, of which 17 of the wells plugged were UIC wells. The Division anticipates it will plug approximately 300 wells through the CARES Act plugging program. The Division awarded bids to reclaim the plugged wells as well as a saltwater disposal pipeline gathering system. At the end of FY2020, no reclamation had been completed.

The Division was awarded two EPA Multipurpose Grants in FY2020, one on January 22, 2020 in the amount of $51,092 and one on September 23, 2020, both used to offset the plugging of two abandoned saltwater disposal wells.

The FY2020 annual EPA Region VIII UIC State Directors Meeting was held virtually on December 1-2, hosted by the Division and EPA. The Division feels this annual meeting is invaluable, allowing the opportunity to interact with EPA and other state regulatory personnel.

North Dakota has had unprecedented activity levels due to development of the Bakken and Three Forks Formation as part of the "Bakken Play" although activity decreased in FY2020 due to the oil price collapse and the COVID-19 pandemic. North Dakota's oil production and well count has risen from approximately 98,509 barrels of oil per day and 3,923 wells in January 2006 to approximately 1,519,037 barrels of oil per day and 18,705 wells in November 2019, decreasing to approximately 1,223,107 barrels of oil per day but 19,064 wells in September 2020. North Dakota rose from the ninth largest producing oil state and is now the second largest producing oil state in the nation.